

# Notice of Allowability

Application No.

10/728,059

Examiner

Kishor Mayekar

Applicant(s)

MAURO, SCHIAVON

Art Unit

1753

## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 3 May 2006 and the interview of 11 July 2006.
2. ☒ The allowed claim(s) is/are 1, 2, 4-7 and 13-25.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date 11 July 2006 .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Attorney Thomas Baker on 11 July 2006.

The application has been amended as follows:

In the Claims:

Amend claims 1, 2, 6 and 25 as follows:

Claim 1: A device for the production of nanotubes, fullerene and their derivatives comprising:

a vacuum chamber 1 having an input port 2 and an evacuation port 3, ~~a high frequency generator 9, an inductor 8 inside of vacuum chamber powered by said high frequency generator 9,;~~

a graphite element 5 mounted in said vacuum chamber 1, ~~an electromagnetic field generated ... around a heating end of the graphite~~

~~element 5;~~

vaporizing means for vaporizing said graphite element 5 from said graphite element 5 and simultaneously forming a high temperature plasma around said graphite element 5;

said vaporizing means comprising an inductor 8 mounted inside said vacuum chamber 1 and a high frequency power generator 9 operatively connected to said inductor 8 to create a strong high frequency electromagnetic field around and in a core of said inductor 8 with eddy currents; and

an inert gas source delivered to flow around said inductor 8 and said graphite element 5.

Claim 2: The device for the production of nanotubes, fullerene and their derivatives of Claim 1 further comprising:

~~a second inductor 12 ... made the previous plasma 10~~

second vaporizing means for vaporizing said graphite element 5 from said graphite element 5 and simultaneously forming a second high temperature plasma around said graphite element 5;

said second vaporizing means comprising a second inductor 12 mounted inside said vacuum chamber 1 and a second high frequency power generator 13 operatively connected to said inductor 12 to create a second strong high frequency electromagnetic field around and in a core of said inductor 12 with eddy currents.

Claim 6: A method for the production of nanotubes, fullerene and their derivatives, in an environment where an inert gas flow is present at atmospheric pressure or at a lower pressure with respect to atmospheric pressure, and a high frequency electromagnetic field is generated around an inductor 8, comprising the steps of subjecting one end of a graphite element 5 within a vacuum chamber 1 to said electromagnetic field and heating said graphite element 5 to vaporization and simultaneously causing the formation and the persistence of a plasma 10 around ~~the~~ a vaporization zone of the ~~same~~ graphite element 5.

Claim 25: The device for the production of nanotubes, fullerene and their derivatives according to the claim 1, wherein the output of said high

frequency generator 9 has a frequency value of approximately 800 kHz and the electromagnetic field generated ~~from~~ around the inductor 8 transmits to the graphite ~~rod~~ element 5 a power of approximately 2.5 kW for each square centimeter of graphite ~~rod~~ element surface faced to the inductor 8.

2. The following is an examiner's statement of reasons for allowance: Because of the amendment and remarks filed 3 May 2006 and the above amendment to claims 1 and 6, claims 1, 2 4-7 and 13-25 are allowed over the prior art references by emphasizing patentable features of the present invention, the vaporizing of the graphite element and the simultaneously plasma forming by the vaporizing means as claimed in independent claim 1; and the heating of the graphite element 5 to vaporization and simultaneously causing the formation and the persistence of the plasma 10 around the vaporization zone of the graphite element 5 as claimed in independent claim 6.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

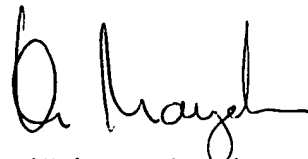
3. The drawings filed 4 December 2003 are acceptable.
4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kishor Mayekar whose telephone number is (571) 272-1339. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to

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the automated information system, call 800-786-9199 (IN USA OR CANADA) or  
571-272-1000.

A handwritten signature in black ink, appearing to read 'K. Mayekar', with a stylized, cursive script.

Kishor Mayekar  
Primary Examiner  
Art Unit 1753